

U.S. Patent Application Serial No. 10/665,204
Response filed December 22, 2004
Reply to OA dated September 22, 2004

AMENDMENTS TO THE SPECIFICATION:

Amend the specification as follows:

Please replace the paragraph beginning at page 1, line 12, with the following rewritten paragraph:

As optical communication systems have been rapidly increasing in capacity, transmission systems with 40 Gbps or higher have been developed in recent years. Semiconductor light-receiving devices to be used in such large-capacity transmission systems need to be capable of operating at high-speed of 40 GHz or higher, and therefore, need to exhibit higher performance and higher reliability than conventional semiconductor light-receiving devices.

Please replace the paragraph bridging pages 7 and 8 (line 31, page 7 through line 9, page 8), with the following rewritten paragraph:

The InGaAsP composition graded layers 14 and 15 are semiconductor intermediate layers that are interposed between the buffer layer 13 and the light absorption layer 16, and that have bandgaps between the bandgap (forbidden bandwidth) of the buffer layer 13 and the bandgap of the light absorption layer 16. Preferably, the composition graded layer 14 has a bandgap equivalent to a wavelength of $[[1.3]]$ 1.1 μm , and the composition graded layer 15 has a bandgap equivalent to

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[[1.1]] 1.3 μm . With the composition graded layers 14 and 15 being interposed, the bandgaps can be gradually increased from the light absorption layer 16 of a narrow bandgap toward the buffer layer 13 of a wide bandgap. Accordingly, the heterobarrier at the interface between the buffer layer 13 and the light absorption layer 16 can be softened.

Please replace the paragraph beginning at page 8, line 10, with the following rewritten paragraph:

The P-side composition graded layers 17 and 18 also reduce the band discontinuity between the light absorption layer 16 and the P-type semiconductor layer 19. Preferably, the compositions should be selected so that the composition graded layer 17 has a bandgap equivalent to a wavelength of [[1.1]] 1.3 μm , and that the composition graded layer 18 has a bandgap equivalent to [[1.3]] 1.1 μm .